DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	GRASSY POND	Lake Area (ha):	5.42
Town:	HOPKINTON	Maximum depth (m):	6.1
County:	Merrimack	Mean depth (m):	2.0
River Basin:	Merrimack	Volume (m^3):	109000
Latitude:	43°13' N	Relative depth:	2.3
Longitude:	71°47' W	Shore configuration:	1.21
Elevation (ft):	464	Areal water load (m/yr):	20.56
Shore length (m):	1000	Flushing rate (yr^{-1}):	10.20
Watershed area (ha):	243.8	P retention coeff.:	0.47
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:	3 March 1988	11 August 1987
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 75%	CHRYSOSPHAERELLA 45%
#2		OSCILLATORIA 30%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		2245.0
CHLOROPHYLL-A (µg/L)		14.84
DOM. ZOOPLANKTON (% TOTAL) #1	CILIATE SPP. 45%	KERATELLA 59%
#2	KERATELLA 42%	CYCLOPOID COPEPOD 12%
#3	CYCLOPOID COPEPOD 7%	TRICHOCERCA 9%
ROTIFERS/LITER	137	425
MICROCRUSTACEA/LITER	28	125
ZOOPLANKTON ABUNDANCE (#/L)	303	550
VASCULAR PLANT ABUNDANCE		Abundant
SECCHI DISK TRANSPARENCY (m)		2.0
BOTTOM DISSOLVED OXYGEN (mg/L)	0.0	0.2
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		< 10
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 2.8
Hypolimnion volume (m^3): None

CHEMICAL:

Lake: GRASSY POND
Town: HOPKINTON

	3 March 1988		11 August 1987		
DEPTH (m)	2.0	4.0	2.0		4.0
pH (units)	6.0	6.0	6.2		6.0
A.N.C. (Alkalinity)	10.2	11.3	6.4		5.9
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.53	0.50	0.39		0.06
TOTAL PHOSPHORUS	0.009	0.014	0.032		0.029
CONDUCTIVITY (μ mhos/cm)	38.1	40.0	28.6		30.2
APPARENT COLOR (cpu)	45	60	53		38
MAGNESIUM			0.45		
CALCIUM			2.9		
SODIUM			1.6		
POTASSIUM			0.40		
CHLORIDE	2	< 2	< 2		< 2
SULFATE	4	4	3		4
TN : TP	59	36	12		2
CALCITE SATURATION INDEX			3.8		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	2	3	3	13	Eutro.

COMMENTS:

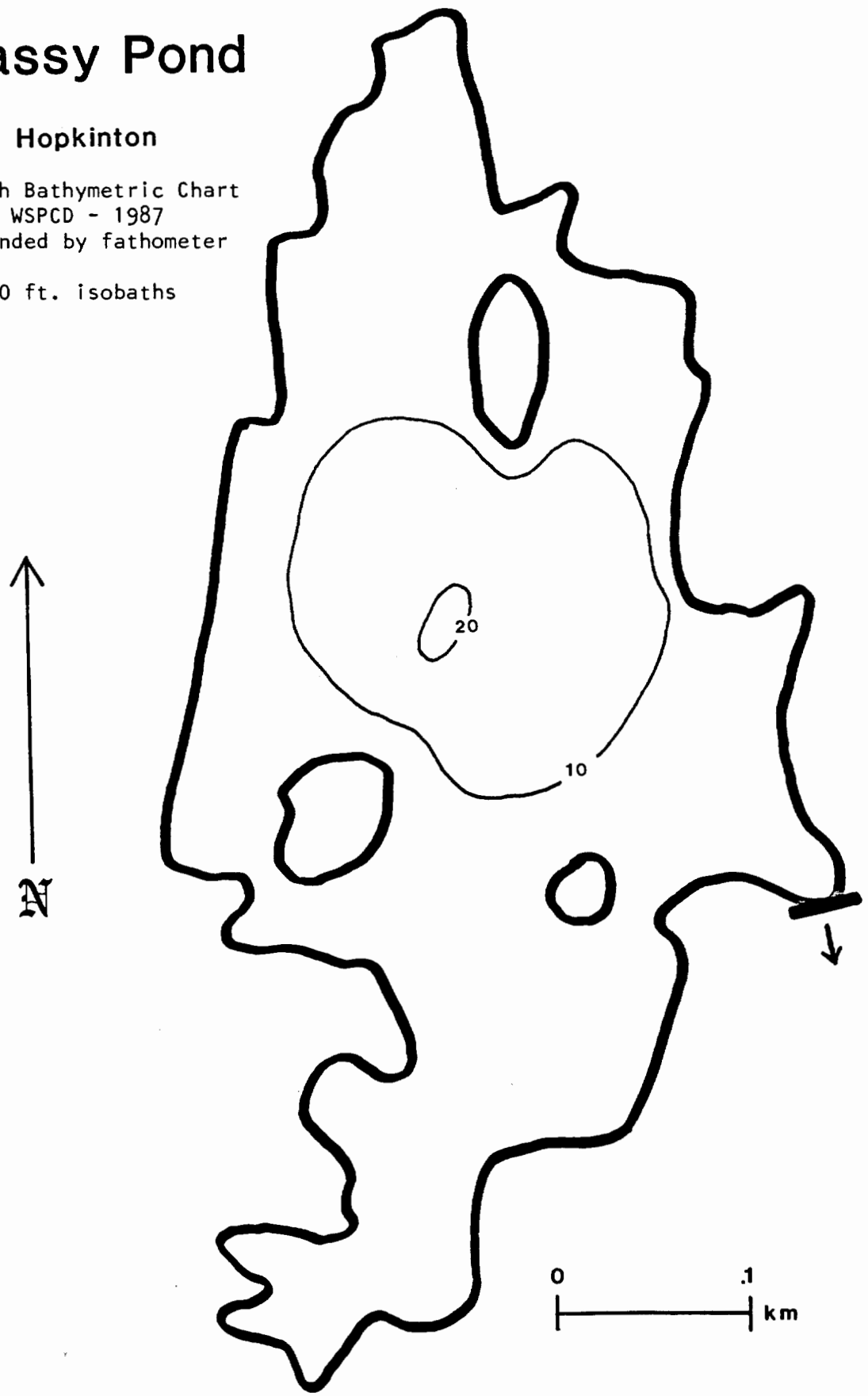
1. The outlet is a man-made dam topped by a beaver dam.
2. No public launch site. We accessed the pond through Camp Merrimack.
3. Green algae (45%) and cryptomonads (30%) were the dominant whole-water phytoplankton. The dominant genera were tiny green flagellates (35%) and Cryptomonas (25%).

Grassy Pond

Hopkinton

Rough Bathymetric Chart
WSPCD - 1987
sounded by fathometer

10 ft. isobaths



FIELD DATA SHEET

LAKE: GRASSY POND
DATE: 08/11/87

TOWN: HOPKINTON
WEATHER: PARTLY CLOUDY, WINDY

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	21.8	3.3	37 %
	1.0	21.9	3.2	36 %
	1.5	21.8	3.1	35 %
	2.5	19.5	0.1	1 %
	3.5	14.0	0.1	1 %
	4.5	11.3	0.1	1 %
	5.5	8.8	0.2	2 %

SECCHI DISK (m): 2.0

BOTTOM DEPTH (m): 6.0

TIME: 1050

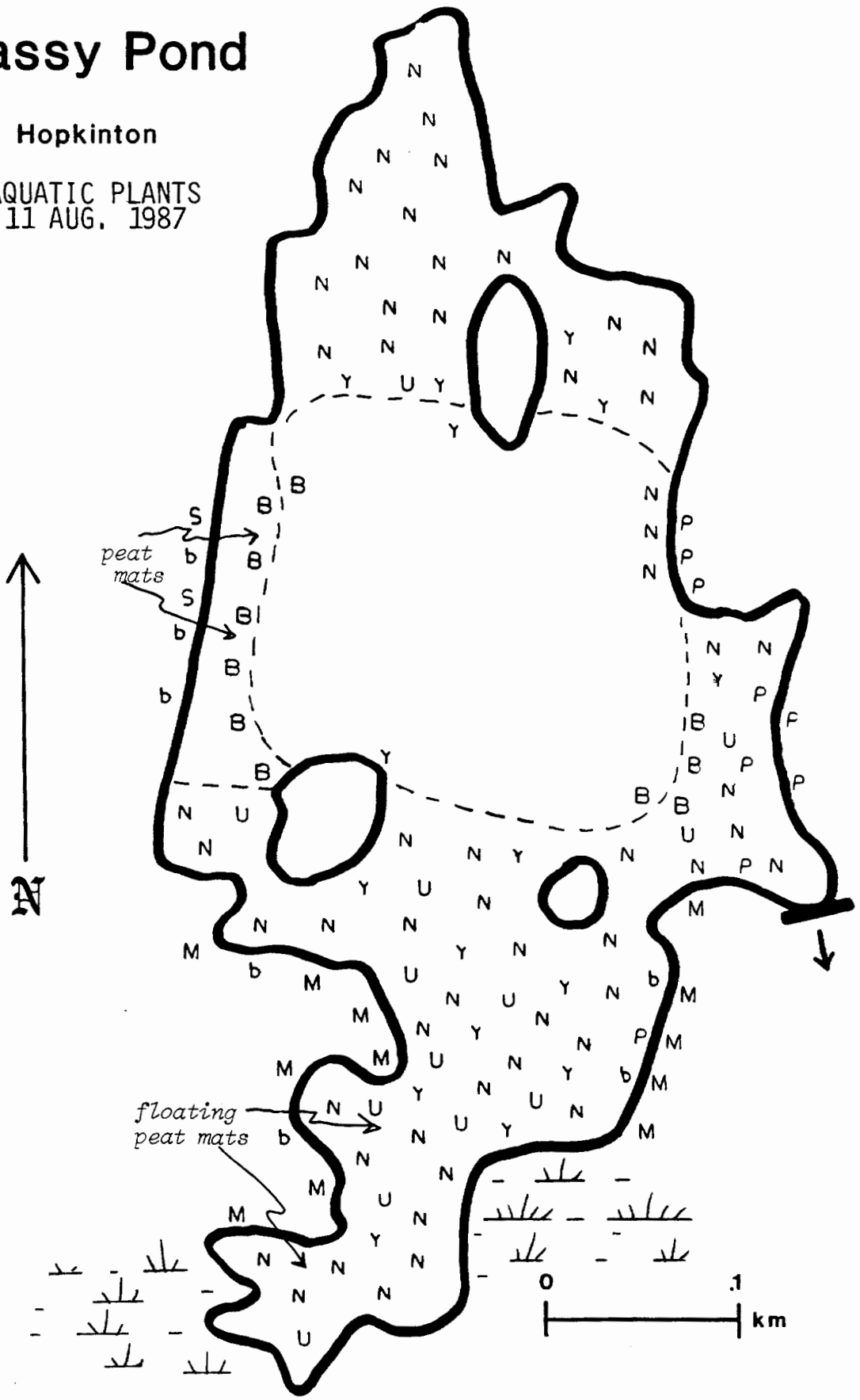
COMMENTS:
Calibration of D.O. meter was double checked. Low D.O. in surface waters appears to be real.

*Dissolved oxygen values are in mg/L

Grassy Pond

Hopkinton

AQUATIC PLANTS
11 AUG. 1987



AQUATIC PLANT SURVEY

LAKE: GRASSY POND TOWN: HOPKINTON DATE: 08/11/87

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
Y	Nuphar	Yellow water lily	Common
N	Nymphaea	White water lily	Abundant
U	Utricularia	Bladderwort	Scattered
M	Myrica gale	Sweet gale	Common
b	Scirpus	Bulrush	Common
P	Pontederia cordata	Pickerelweed	Scattered
B	Brasenia schreberi	Water shield	Scattered
S	Sparganium	Bur reed	Sparse

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. This pond consisted of a small, relatively weed-free open area in the middle (the natural pond area), surrounded by a shallow, weedy area that was flooded by the dam. Plants were too thick to navigate through in this area.
2. The shoreline was mostly sweet gale with some buttonbush, Scirpus, and pickerelweed intermixed. The shallow water area was mostly Nymphaea and Nuphar with floating peat mats common.
3. A bog was located at the southern end of the lake and contained Xyris, Drosera and Hypericum, as well as the Scirpus and Sweet gale found around the rest of the pond.